

## The Effect of Geogrid Reinforcement Pre-Stressing on the Performance of Sand Bed Supporting a Strip Foundation

**Authors :** Ahmed M. Eltohamy

**Abstract :** In this paper, an experimental and numerical study was adopted to investigate the effect geogrid soil reinforcement pre-stressing on the pressure settlement relation of sand bed supporting a strip foundation. The studied parameters include foundation depth and pre-stress ratio for the cases of one and two pre-stressed reinforcement layers. The study reflected that pre-stressing of soil reinforcement resulted in a marked enhancement in reinforced bed soil stiffness compared to the reinforced soil without pre-stress. The best benefit of pre-stressing reinforcement was obtained as the overburden pressure and pre-straining ratio increase. Pre-stressing of double reinforcement topmost layers results in further enhancement of stress strain relation of bed soil.

**Keywords :** geogrid reinforcement, prestress, strip footing, bearing capacity

**Conference Title :** ICCSGE 2016 : International Conference on Concrete, Structural and Geotechnical Engineering

**Conference Location :** Amsterdam, Netherlands

**Conference Dates :** August 04-05, 2016